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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/688,724	10/17/2003	Ronald Quentin Bennett	DN2002-178	1779

7590 01/06/2006

The Goodyear Tire & Rubber Company  
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EXAMINER

DANG, THUAN D

ART UNIT PAPER NUMBER

1764

DATE MAILED: 01/06/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

<b>Office Action Summary</b>	<b>Application No.</b> 10/688,724	<b>Applicant(s)</b> BENNETT ET AL.	
	<b>Examiner</b> Thuan D. Dang	<b>Art Unit</b> 1764	

**-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --**

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 13 September 2004.
- 2a) ☐ This action is **FINAL**.                      2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-25 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-25 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All    b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- |  |   |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)  | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)   | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152)             |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)<br>Paper No(s)/Mail Date <u>9/13/04</u> . | 6) <input type="checkbox"/> Other: _____  |

## **DETAILED ACTION**

### ***Specification***

The abstract of the disclosure is objected to because the abstract should be limited to from 50 to 150 words in a single abstract. Correction is required. See MPEP § 608.01(b).

### ***Claim Rejections - 35 USC § 112***

The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

Claims 1-25 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Regarding the step of isomerizing recited in claims 1 and 23-25, it is unclear how an isomerization can be carried out in the presence of a catalyst having a function (transalkylation) which is totally not related to the reaction (isomerization) recited in the step. In other words, it is unclear what the transalkylation catalyst will function in the isomerization step.

Regarding claims 1, 20-23, and 25, in the step of (5), "the transalkylation step" lacks a clear antecedent basis since there is no step of transalkylation recited in the claim instead of a transalkylation catalyst.

***Claim Rejections - 35 USC § 103***

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

Claims 1-6, 8-9, 11-16, and 19-25 are rejected under 35 U.S.C. 103(a) as being unpatentable over Hervert (3,763,259) in view of GB 809,908.

Hervert discloses a process including a step of alkylation of benzene or in a mixture with cumene with propene in the presence of alkylation catalyst to produce a mixture containing para-

Art Unit: 1764

diisopropylbenzene and its meta isomer. The para-isomer in the alkylation effluent is fractionated out to obtain a stream containing meta-isomer which is then isomerized to produce more para-isomers (the figure; the abstract; col. 5, line 57 thru col. 6, line 15; col. 7, lines 3-11).

While applicants claim using cumene, specially "void of benzene" as called for in claim 2, Hervert prefers to use benzene as the reactant for the alkylation to produce dialkylisomers (col. 5, lines 57-62). However, Hervert also discloses that cumene may be in the mixture with benzene (col. 5, line 60). Further, GB discloses cumene and benzene may be equivalent alkylatable reactants for the alkylation with propene to produce a mixture of dialkylisomers (page 1, lines 31-41).

It would have been obvious to one having ordinary skill in the art at the time the invention was made to have modified the Hervert process by using cumene as the alkylatable reactant in the place of benzene since it is expected that equivalent reactants would yield similar results.

Hervert discloses that the isomerization can be the transalkylation catalyst (col. 9, lines 1-23).

The condition of the isomerization and the alkylation can be found on column 6, lines 54-57 and column 10, lines 1-8.

The catalyst of the alkylation and the transalkylation step as called for in claims 5, 6, 8, 9, 13, and 14 can be found on column 6, lines 1-15 and column 8, line 52 thru column 9, line 15.

Regarding claim 19, Hervert appears not to disclose feeding cumene to the isomerization zone. Instead, cumene is fed to the disproportionation zone before its effluent is further fed to the isomerization zone. However, as disclosed by Hervert, the isomerization and the transalkylation

Art Unit: 1764

step are carried out in the presence of similar catalysts under the similar temperature and pressure (col. 9, lines 1-36; column 9, lines 52-58; col. 10, lines 1-8).

It would have been obvious to one having ordinary skill in the art at the time the invention was made to have modified the Hervert process by running the disproportionation and the isomerization step in the same reactor since these two reactions can be carried out in the same catalyst, same condition of temperature and pressure.

The ratio of the cumene to m-isomer are obviously selected to optimize the process since it has been held by the patent law that the selection of reaction parameters such as temperature and concentration would have been obvious. More particularly, where the general conditions of the claimed are disclosed in the prior art, it is not inventive to discover the optimum or workable ranges by routine experimentation. *In re Aller* 105 USPQ 233, 255 (CCPA 1955). *In re Waite* 77 USPQ 586 (CCPA 1948). *In re Scherl* 70 USPQ 204 (CCPA 1946). *In re Irmischer* 66 USPQ 314 (CCPA 1945). *In re Norman* 66 USPQ 308 (CCPA 1945). *In re Swenson* 56 USPQ 372 (CCPA 1942). *In re Sola* 25 USPQ 433 (CCPA 1935). *In re Dreyfus* 24 USPQ 52 (CCPA 1934).

Recovering and recycling products, unreacted components to appropriate locations in the process are obvious to recover the cost of material.

Claims 7, 10, 17 and 18 are rejected under 35 U.S.C. 103(a) as being unpatentable over Hervert (3,763,259) in view of GB 809,908 further in view of Haag et al (4,418,235).

Hervert does not disclose using ZSM-12 as alkylation and/or transalkylation catalyst (see the entire patent for details). However, Haag discloses that ZSM-12 can function as a

Art Unit: 1764

transalkylation or alkylation catalyst (the abstract; col. 5, line 25; col. 9, lines 67 thru col. 10, line 8).

It would have been obvious to one having ordinary skill in the art at the time the invention was made to have modified the Hervert process by using ZSM-12 as the alkylation and/or transalkylation catalyst since the Haag catalyst has an increased catalytic activity (the abstract).

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Thuan D. Dang whose telephone number is 571-272-1445. The examiner can normally be reached on Mon-Thu.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Glenn Caldarola can be reached on 571-272-1444. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Thuan D. Dang  
Primary Examiner  
Art Unit 1764

10688724.20051223

A handwritten signature in black ink, appearing to be 'Thuan D. Dang', written over a horizontal line.